XM153 CROWS Software Integration Laboratory

The XM153 CROWS is a remotely operated system that provides the capability to remotely aim and fire a suite of crew-served weapons. This capability can be accomplished from either a stationary platform or while on the move. The system is capable of being mounted on a variety of vehicles and will use the host vehicle's system power. The system is currently in operation in Iraq and Afghanistan and was featured on a CNN news special (June 6, 2010).

The XM153 CROWS consists of a mount and a weapon cradle, traverse and elevation drives, weapon interface, weapon remote charger, ammunition magazine feed system, viewing and sighting unit, and a fire control unit (electronics support, fire control processor, control/display unit) and a control grip located inside the vehicle. See figure below (fire control unit not displayed).

The XM153 CROWS Software Integration Laboratory (SIL) is a fully functional development and testing laboratory developed to support the XM153 CROWS system. The lab was designed and created to provide the ability to develop new enhancements and modifications to the underlying fire control unit software within the XM153 system.

The XM153 CROWS software is comprised of multiple software components. The XM153 CROWS SIL provides a development environment for each software component. All XM153 CROWS software components have been built and can be recreated and/or modified as needed on request from the Program Manager. In addition to providing direct support for the XM153 CROWS project the SIL also promotes research and development efforts for new fire control technologies and extensions to the existing project.

The lab includes the following hardware and functionality:

- A full working XM153 CROWS system
- Both Thick and Split screen configurations
- Monitors for teaching and demonstration
- Added research components and extensions to XW153 project
- Hardware component installation, removal and replacement
- Troubleshooting and diagnostic field support
- TFS (Team Foundation Server) development

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- State of the art PC workstations with access to TFS
- Software download tools

The SIL contains nine separate IDE environments along with the capability for more. Software development is performed efficiently and economically as requirements are translated through the design and implementation stages entirely within the SIL. This capability of developing and maintaining XM153 software local to Picatinny allows for a quicker time to the field, cost savings and increased domain knowledge. Close proximity to the customer (soldier) provides the greatest feedback for suggested enhancements and improvements. Mock-ups and prototypes can be utilized to quickly define needed requirements accurately and efficiently.

An additional feature of the SIL is rapid and advanced troubleshooting to support field operations. Questions regarding the specific behavior of a particular feature of the XM153 CROWS system can be tested empirically while verifying programmatically through a source code walkthrough. This unique feature provides the field users with a high level of confidence regarding the expected behavior of the XM153 CROWS system.

Point of Contact

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